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WHAT IS CLAIMED IS:

- 1. Ball bearing cage in the form of a ring obtained by machining or casting, defining recesses for receiving balls in one row and intended to be interposed between an inner ring and an outer ring of a bearing,
- wherein said recesses are distributed in two groups, each recess of the first group having an opening for positioning a ball located on a first side of said cage, while each recess of the second group has an opening for positioning a ball located on a second side of said cage, opposite the first side.
- 2. The cage of Claim 1, wherein each recess is defined between two arms
 and a bottom, said arms extending, when said cage is in configuration mounted
 in a bearing, in a direction substantially parallel to an axis of rotation of the
 bearing, while said bottom is substantially perpendicular to said axis.
- 3. The cage of Claim 2, wherein certain of said arms define two adjacent recesses belonging to the same group of recesses, said arms each comprising a first end adjacent the respective bottoms of said adjacent recesses and a second free end.
 - 4. The cage of Claim 2, wherein certain of said arms define two adjacent recesses belonging to the two groups of recesses, said arms comprising a first end adjacent the bottom of one of said two adjacent recesses and a second end adjacent the bottom of the other adjacent recess.
 - 5. The cage of Claim 2, wherein the bottom of the recesses of a group of recesses is pierced with an orifice for passage of a member for extracting balls in place in said recesses.
- 6. The cage of Claim 2, wherein said arms each form two concave surfaces oriented towards two adjacent recesses and adapted to cooperate with the outer surface of said balls.

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7. The cage of Claim 1, wherein said first group of recesses comprises all the recesses except two, while the second group comprises two diametrally opposite recesses.

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- 8. The cage of Claim 1, wherein it is cast or machined in one piece, of metal or a composite material.
 - 9. Ball bearing comprising a single row of balls, disposed between an inner ring and an outer ring, and a cage according to Claim 1.
- 10. Ball bearing according to Claim 9, wherein at least one of said rings is provided with at least one notch for introduction of said balls in an internal
 10 volume defined between races formed respectively on said inner and outer rings.
 - 11. Process for assembling a ball bearing which comprises a single row of balls, disposed between an inner ring and an outer ring, and a cage defining recesses for receiving said balls, in which process balls are introduced in a volume defined between races formed respectively on said inner and outer rings,

wherein it comprises the following steps of:

- introducing in said internal volume and via at least one notch made on one side of said bearing, a number of balls less than the nominal number of balls of said bearing,
- positioning said cage by causing said balls, already in place in said volume, to penetrate in recesses in said cage open on a first side of said cage, and
- introducing, via said notch or notches, a ball in at least one recess of said cage open on a second side of said cage.